Precaution for Covid-19 based on Mask detection and sensor

Shibin Sibi[1], Gayatri Jamkar[2], Aishwarya Jadhav[3], Dr. S.L. Lahudkar[4]

[1,2,3,] *Student, Dept. of Electronics and Telecommunication Engineering, Imperial College of Engineering and Research,Pune, Maharashtra, India*

[4] *Assistant Professor, Dept. of Electronics and Telecommunication Engineering, Imperial College of Engineering and Research,Pune, Maharashtra, India*

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Abstract - This project has developed a way to deal with head-to-head separation by adopting color-coded color analysis and line images. The proposed method combines color space and face height with a gray image and trains CNN to extract subdivision features. And it's hardware pulse sensor monitors human oxygen levels and detects and monitors temperature through a temperature sensor.

Key Words: **Python, Internet of things, Visualization, Raspberry Pi**

1. INTRODUCTION

The proposed system will provide easy access to various machine learning modules, helping users to understand and use them according to their will. Face mask detection has become an important computer vision task to support the global community, but research on facial mask detection has been limited. we use a raspberry pi as a case management tool cv library is used for face detection, and face detection is done using image processing technology.

2. MACHINE LEARNING

"AI is about learning about making PCs learn and act as human beings, moreover, developing their skills in the long run independently, in the form of taking care of information and records such as ideas and verified communication." AI statistics use scales to find designs with large amounts of information *. Moreover, here, information covers many things — numbers, words, pictures, clicks, what you have. At the risk of being carefully removed, it is best to take care of AI calculations. AI is a cycle that empowers the huge numbers of administrations we use today — framework frameworks like these on Netflix, YouTube, and Spotify; web search engines like Google and Baidu; web-based media channels such as Facebook and Twitter; voice colleagues like Siri and Alexa. The rundown continues. All in all, in each case, they have seized it, despite obstacles we can scarcely imagine. " Think about what you might want immediately. Machine learning offers to make the machine smarter and more reliable.

3. EXISTING SYSTEM

There was no education system available for reading in reading libraries especially in one place, if we want to know or learn about machine learning we have to search online for a great resource. Existing educational sites also do not provide us with information about multiple reading libraries in one place.

Only existing code is available in the existing system, which is only available for learning purposes but no such option is available manually over different modules in one place. There is no such option available to compare user modules with existing modules.

4. PROPOSED SYSTEM

In our system, we overcome the barriers of the existing system. In the proposed system the user will be able to access all the machine learning modules in one place. The user does not have to dig deep through the vast internet of each Machine Learning module. In the proposed program, we will bring all Machine modules to one place for learning, use, and practice.

We will also add a comparison system between the existing module and the modified user module and check the performance time.

It will help to reduce attempts to dig out Modules over the larger internet. It will be considered an educational system for users to learn.

4.1 CNN Algorithm

Convolutional Neural Network (ConvNet / CNN) is an in-depth Learning algorithm that can take a captured image, assign value (readable weight and bias) to the various elements/elements in the image, and be able to distinguish one from the other.

CNN is widely used in image analysis functions such as image recognition, object detection, and classification. There are three types of layers in Convolutional Neural Networks: 1) Transformation Layout: In the normal network of each neural neuron input is connected to the next hidden layer.

5. SYSTEM SPECIFICATION

5.1 Hardware Specification

RAM: 8 GB

As we are using Machine Learning Algorithm and Various High-Level Libraries

Laptop

RAM minimum required is 8 GB.

Hard Disk: 40 GB

Data Set of Mask and unmask images is to be used hence a minimum of 40 GB of HardDisk memory is required.

Processor: Intel i5 Processor

PyCharm IDE that Integrated Development Environment is to be used and data loading should be fast hence Fast Processor is required

IDE: PyCharm

Best Integrated Development Environment as it gives possible suggestions at the time of typing code snippets that make typing feasible and fast.

Coding Language: Python Version 3.5

Highly specified Programming Language for Machine Learning because of availability of High-Performance Libraries.

Operating System: Windows 10

Latest Operating System that supports all types of installation and development environment

Raspberry Pi: 3B+

Temperature Sensor: LM35

Heart Beat Sensor: Pulse Sensor

5.2 Software Specification

Operating System: Windows 10

IDE: PyCharm, Spyder
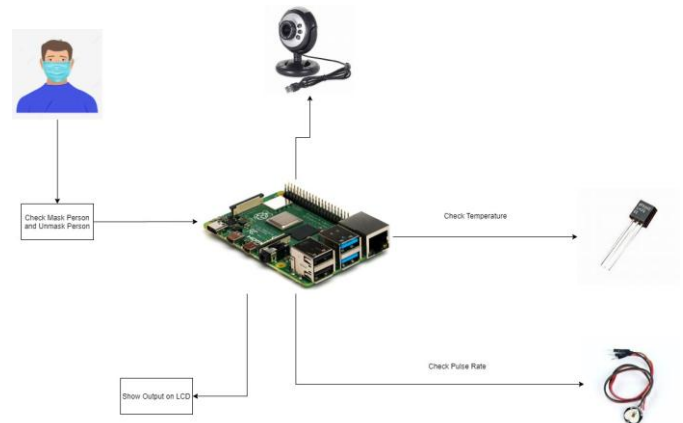
Programming Language: Python

6. BLOCK DIAGRAM

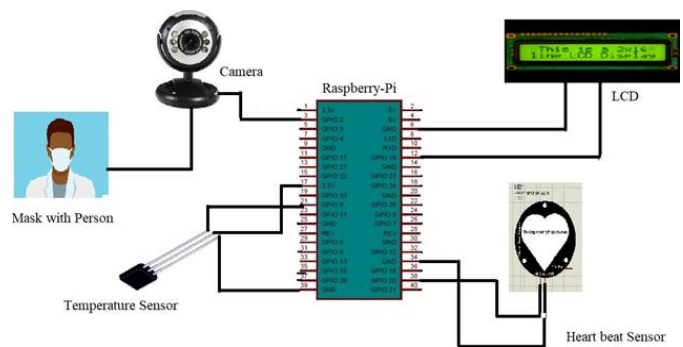Fig 6 : Block Diagram

7. DESCRIPTION OF CIRCUIT DIAGRAM

Fig 7: Circuit Diagram

7.1 Module

pre-processing: User login Registration for security purpose in this model Camera takes an image of a mask and unmask the person

Feature Extraction: In this model given images they remove unwanted data, removenoisy part of the image

classification: In this model, they apply an algorithm for classifying the image todetect the unmasked person and then show the final output.

7.2 Data Flow Diagram

In Data Flow Diagram, we Show the flow of data in our system in DFD0 we show that base DFD in which the rectangle presents input, as well as output, and the circle, shows our system, In DFD1 we show actual input and the actual output of system input of our system is text or image and output is Unmask person detected likewise in DFD 2 we present operation of the user as well as admin.
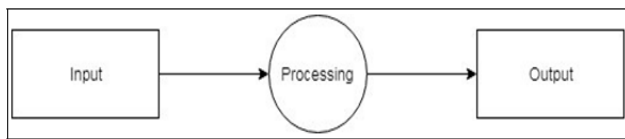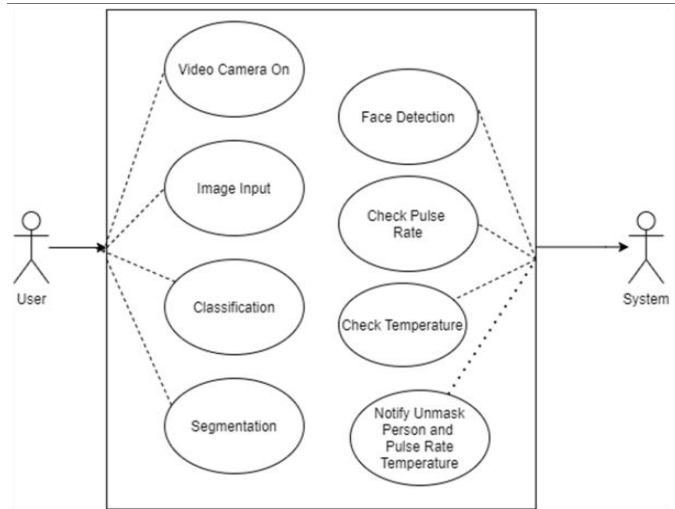
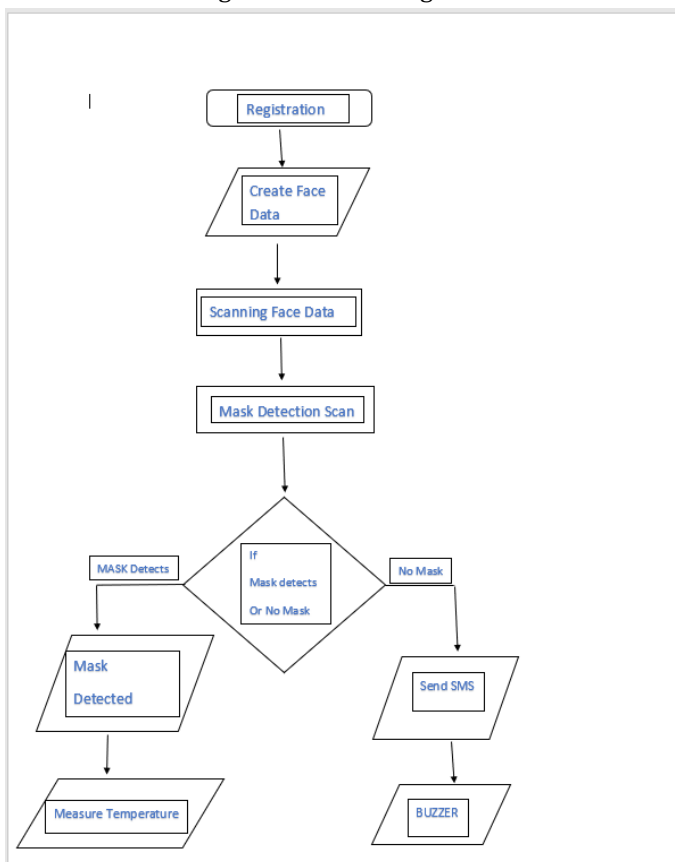Fig 7.2: Data Flow Diagram

Fig 7.3: Usecase Diagram
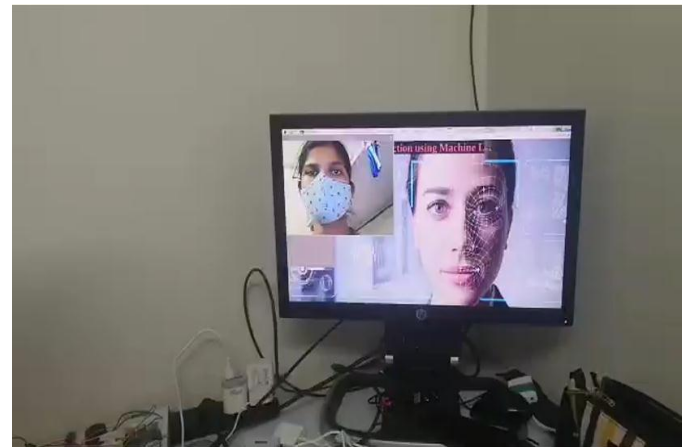

Fig 7.4: Flow Chart

8. RESULT

Fig 8: Result

9. CONCLUSIONS

We will be creating a model that will test whether a person is wearing a mask or not and will determine if that person has a low temperature to be notified. Therefore, we can try to reduce Covid patients.

10. REFERENCES

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11. BIOGRAPHIES

Dr. S.L Lahudkar
Professor
B.E(Electronics And Telecommunication)

Shibin Sibi
Author (Team Leader)
B.E(Electronics And Telecommunication)

Gayatri Jamkar
Co -Author (Team Member)
B.E(Electronics And Telecommunication)

Aishwarya Jadhav
Co-Author (Team Member)
B.E(Electronics And Telecommunication)